

QUEENSLAND DIVISION ISSUE

# AMATEUR RADIO



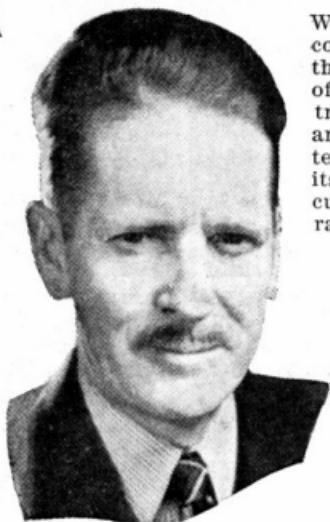
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# AMATEUR RADIO

Published by the Wireless Institute of Aust., Victorian Division.

Vol. 6 No. 8

1st August, 1938.

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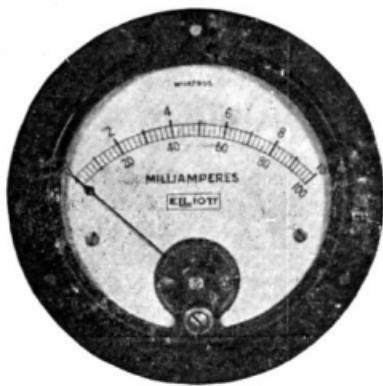
Subscription to "Amateur Radio" is 6/- per Annum (Post Free), paid in advance.

Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

Advertising and Publishing Office: Address Publicity Manager, "Amateur Radio," Whitehorse Road, Box Hill, E.11. Phone: WX 2429.

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— **EDITORIAL**

How often have we paused each time a new idea or event has marked another step in the advance of Amateur Radio and wondered along what lines our hobby is to be influenced during the future years and what new developments are likely to occur and what unforeseen and far reaching effects each item is to have on our general operation and on the Ham Radio Movement.

It is not so many years since transmissions using the quartz crystal as the stabilising element were first introduced to ham circles, of necessity, due to the narrowing channels, and now hardly a station exists, which does not employ this system of stability. The super-het method of reception has been re-introduced into ham radio to stay, that is of course, until any better system is forthcoming, and with it, associated improved features, involving crystal filters, R.F. regeneration, image rejection, noise suppression and audio filtering, constituting improvements, which have been a definite advance on the receiving side in latter years.

The advent of beam tubes and high efficiency triodes of improved design with better driving and ultra high frequency efficiencies, is an example of improvements from the transmission angle. New and more suitable apparatus, an increasing population of the lower frequency, channels, coupled with the incentive to "see what exists on the other side," is responsible for the achievements and the increased activity, which is now evident on our ultra high frequency bands. The whole atmosphere and background of ham radio alters year by year.

Over a period of years, we have passed through many stages of evolution, from the days of spark, when we contented ourselves with yarning to the fellows in the next suburb, to now, when international radiotelephone communication is, one might term, an after dinner relaxation; from the time when our interests centred around fixed gaps and galena-crystals, to to-day, when items of varied interest are too numerous to mention; when our bands were measured as "allbelow," to now, when they are measured in kilocycles width, during which time we have had to evolve gear to meet the situation. Where else does the proverb so aptly apply, "Necessity is the mother of invention."

Through these years the personnel of ham radio has not remained unaltered. On an average we claim, we are more efficient and better informed than of former years through the efforts of our organisations and publications from which tuition and information is so readily available; and rightly so in this year of 1938.

The movement comprises men of varied interest: DX men, key-punchers, fone men, high frequency men, broadcasters; all add to make the movement what it is to-day, but we feel that it is the experimental streak that exists in most of us, that desire to "see what is on the other side," that will influence the circumstances that govern the ultimate future of Ham Radio.

## Meters

by P. J. K.

For the purpose of this article, meters will be divided into five groups:—

Moving coil,  
Moving iron,  
Dynamometer,  
Thermal,  
Electrostatic.

The first of these is the most important as it is by far the most useful and the commonest of all the types met with in radio work. Its construction is quite simple (see Fig. 1). The magnet is of high quality, generally tungsten or cobalt steel specially treated to retain its magnetism over a long period, and shaped at the ends of the poles to fit closely around the moving coil. This latter consists of a few turns of fine wire wound on a square aluminium former, pivoted at each end with jewelled bearings and constrained to its minimum position—zero on the scale—by means of two fine hairsprings. These also serve

North pole of the coil approaches the South pole of the permanent magnet. The pointer is affixed to the moving coil and moves across the way in which the current flows through the coil. The meter, therefore, has polarity and needs to be connected correctly in the circuit. It will not read A.C. as it will stand still under the action of the two currents tending to make it go in opposite directions faster than its inertia will allow.

In order to achieve high sensitivity it is essential to have a high flux density, light moving parts and a minimum of friction in the bearings. In extreme cases only a single pivot is used, or none at all, the movement being entirely suspended, in which case the limit to sensitivity is the elastic strain in the suspension.

Assuming that the magnet is perfectly homogeneous, the gap perfectly uniform, and the deflection of the springs directly proportional to the torque, then the scale will be linear. While none of the above requirements are perfectly met, the variations are too small to warrant attention, except where extreme accuracy is desired. In the case of the cheaper instruments a printed scale is used as distinct from individual calibration and still an accuracy of two per cent. can be guaranteed. A warning is here necessary that this figure of two per cent. often means that the accuracy at any point on the scale is within two per cent. of the full scale deflection—or, in other words, with a 0-100 volt scale the meter can be two volts out at, say, the ten volt point and still be within the limits of the guarantee.

This type of movement is essentially a current indicator as the rotational torque is proportional to the current flowing, but, of course, it merely needs a series resistance and the application of Ohms Law to measure voltage. Similarly, the range of current measurements can be extended by putting a resistance in parallel so that only a certain fixed

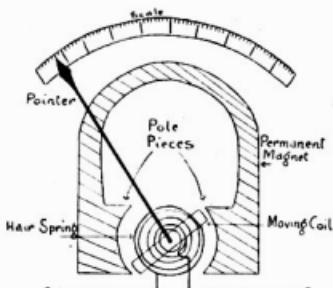


Fig. 1.

to carry the current through the moving coil. The centre of the space around which the moving coil travels contains a cylinder of soft iron which serves to close the magnetic path, thus reducing its reluctance and also causing a more uniform distribution of flux.

When a current flows through the coil it becomes a small electromagnet and hence moves so as to adjust its position with regard to the magnetic field in which it is placed, so that the

fraction of the total current is read by the meter.

It is desirable that the movement should be "dead beat," that is, that it should come quickly to a standstill at the spot to be indicated and not oscillate backwards and forwards. This is achieved by magnetic damping. As the coil cuts across the magnetic field the flux also links with the aluminium former and generates a current therein. The direction of this current is such that its field

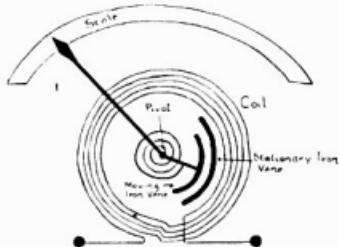


Fig. 2.

tends to oppose the force that produced it, and so the faster the rotation the greater is the braking action. It will be noted that this system does nothing to increase the frictional losses nor the weight of the movement.

High sensitivities are readily obtainable. Servicemen's meters with a full scale reading of 50 microamps. are available, and much lower readings can be obtained with laboratory instruments. Its versatility can be appreciated when it is realised that with a single movement it is possible by providing shunts to read current, with series resistors to read voltage, with a series resistor and a battery to read ohms, a copper oxide rectifier to read A.C. of low frequency and a thermo couple or a vacuum tube to read currents at radio frequencies.

### Moving Iron Meters.

A typical construction for one of these types is as shown in Fig. 2. The coil carries the current to be measured and consists of a large number of turns of fine wire for a voltmeter and a few turns of heavy wire for an ammeter. In the centre of the coil are two pieces of soft iron, one fixed and the other (to which are attached the pointer and hairsprings) moveable. When a current passes through the coil it mag-

netises the two vanes with like polarity. Following the fundamental rule for like and unlike charges, the moveable iron will be repelled away from the other piece and the meter will read accordingly. A variation of this construction is seen in the attraction type in which a single piece of iron alone is used.

These meters read independently of the direction in which the current is passed through the coil and so can be used to measure A.C. of low frequency. As the frequency is increased the inductance of the coil becomes an important factor which must be taken into consideration, and which indeed—together with the capacity at radio frequencies—limits the meter to supply and audio-frequencies with a correction needed for the higher audio range. D.C. can also be measured, but sometimes a reversal error is found, that is, the reading will vary with the direction in which the current passes through the coil. If such is found to be the case, the mean of the two readings will be substantially correct. If the meter was calibrated on A.C. inaccuracy may occur on D.C. as this can be regarded as A.C. of zero frequency and unless the inductance is small or well swamped by resistance, there is likely to be a frequency error. Another variation of this instrument is one in which the moving iron is replaced by a bit of steel which is polarised by being placed in the field of a permanent magnet. These meters are used on D.C., generally with a centre zero such as on a car dashboard to indicate charge and discharge.

The scale of the moving iron meter is not linear owing to the fact that the torque produced is proportional to the square of the current and also to the rate of change of inductance between zero and full scale deflection. Damping is pneumatic, being arranged by having a small piston compress a cylinder of air. Its ruggedness is a desirable characteristic, as no current passes through the moving parts and overloads of many hundred per cent. will probably have no effect other than bending the needle.

Another point in its favour is that it reads the R.M.S. value and is free from waveform error. The main obstacle to its popularity is the fact

that it cannot be made with a sensitivity approaching the moving coil type. Two typical meters with 15 and 150 volt scales require 75 and 15 m.a. respectively for full deflection.

### Dynamometer Meters.

These are really a cross between the moving coil and the moving iron types, as they utilise the field coil of the latter with a moving coil instead of a moving iron. The two coils are connected in series and both are magnetised by the current passing through them. They read A.C. and D.C., have a square law scale and a frequency error, are less rugged, but can be made more sensitive than the moving iron types. They are about as common among amateurs as ten pound notes.

### Thermal.

These are of two types, thermal expansion—hot wire to you—and thermocouple. A simple example of the former type is shown in Fig. 3. Here the current to be measured passes through the resistance wire A.B. This wire is very fine and on being heated by the current expands. This expansion is taken up by the spring C through a silk thread which is attached to the centre of the hot wire by a small hook, after passing around a drum D carrying the indicator.

D.C. and A.C. both audio and r.f. are measured with very little frequency error, and R.M.S. values are indicated. As the heat developed depends on the square of the current ( $I^2R$ ) the scale will be square law.

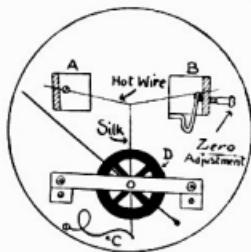


Fig. 3.

Owing to the fact that they are normally running at a very high temperature these meters have little overload margin, and are subject to variation with room temperature.

They are very sluggish in action, are very insensitive and except for home made instruments are fading into the dim past.

The second type shown in Fig. 4 consists of a sensitive moving coil instrument connected to the D.C. output of a thermocouple. These couples vary in construction, but consist basically of two fine wires of dissimilar metals, such as iron and

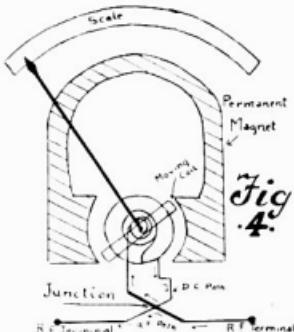


Fig. 4.

Eureka, joined together, which when heated develop an E.M.F. between them. This is used to force a current (D.C.) around an external circuit which is measured by the D.C. meter and is a measure of the heat developed by the input current.

This meter has the same advantages as the hot wire instrument but in addition can be made more sensitive. It is the standard type for measuring r.f. currents and numerous methods of construction are used such as insulating the r.f. or heater circuit from the D.C. path, using pairs of couples in series, and running the unit in a vacuum, while special precautions are necessary as the higher frequency range is approached. Care is taken to keep the leads as short as possible, and free from bends as well as avoiding capacity effects from the r.f. circuit to the mounting frame. To avoid skin effect on the ultra high frequencies, which increases the resistance and causes the instrument to read incorrectly, a special tubular heater element of thin platinum foil welded to the thermocouple is used. The May issue of Q.S.T. gives some useful data on the degree of inaccuracy of early Weston instruments, together with a chart showing the necessary correction factors.

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To increase the range a shunt may be used on D.C. and low frequencies but at high frequencies appreciable error will result because of the inductance of the loop formed by the shunt. An arrangement that is satisfactory at r.f. consists of two condensers in parallel, one larger than the other. The current divides between them directly as their capacities, and if the meter is placed in series with the smaller one, the larger condenser acts as a shunt. It is essential that the reactance of the series condenser be much higher than the resistance of the thermocouple.

## Electrostatic.

This is another *rara avis* being only occasionally seen outside the laboratory. For an idea of the construction imagine a very finely constructed condenser of, say, 100 micro micro farads with the moving plates mounted on jewelled bearings, equipped with a pointer, and a pair of hair springs to hold it in the zero capacity position. When connected across a source of E.M.F. the plates, having dissimilar charges, are attracted to each other and the pointer indicates the degree of the attraction and consequently the voltage applied. The torque produced is very low so that a light construction is essential. (If you should see your tank condenser suddenly close when you switch on the power you can be reasonably certain you are over the 50 watt limit.) The smallest full scale reading readily obtainable is about 150 volts. Smaller voltages, however, can be measured by connecting in series a battery of known voltage so as to raise the reading into a portion of the scale which can be read with ease. For example, suppose a condenser was thought to be charged to 15 volts and it was desired to measure this. As the 150 volt instrument had as its lowest calibrated division 20 volts it would be unsuitable. But by connecting a 60 volt battery in series with the condenser we could obtain a reading of 75 volts, from which the battery voltage could be subtracted. Higher voltages can be measured by utilising the voltage divider principle, using a divided resistance for D.C., and any number of equal capacities in

series for A.C., then measuring the voltage across any percentage of the whole. The total voltage can then be calculated.

As the attraction is proportional, with a constant capacitance, to the square of the applied voltage, the scale would tend to follow a square law, but as the capacitance varies with the deflection, the plates are shaped so as to modify the scale to be open in the middle and only cramped at the extreme ends. The first 20 per cent. or so is useless and is not calibrated.

The importance of being able to make a measurement without taking any power from the circuit will be appreciated, and for such readings as the grid bias on a large valve, the charge in a condenser, the no load voltage of the power supply, or the voltage across the load in the plate circuit of a valve and others of a like nature the electrostatic voltmeter is without peer. Care must be taken that the capacity does not disturb the circuit across which it is placed—it would be useless to lump an instrument of 100 micro micro farads capacity across a tuned circuit. The capacity varies with the range of the meter, being considerably less than the value stated above with high voltage instruments.

Another precaution which must be observed is to remember that although no current is taken on D.C., a current which varies with the frequency is taken on A.C. As the condenser is nearly without loss the current will be almost wattless and negligible power will be taken from the circuit. Nevertheless, this current may be more than the circuit can stand. In the instrument described, at full scale deflection (150 volts) the current taken is 94 micro amps. at 1 k.c. and 94 milliamps at 1,000 k.c.

## Rectifier Instruments.

Although not previously classified in this article because they are hardly a different type of movement, rectifier meters have characteristics which warrant consideration. It will have been noticed that so far no meter has been described that is capable of reading low A.C. voltages with a high sensitivity. The rectifier meter fills the requirements as it is possible to obtain meters with less

than 1 milliamp or 1 volt full scale deflection.

Fundamentally, it consists of a moving coil milliammeter used in conjunction with copper oxide metal rectifier. The rectifier is usually bridge

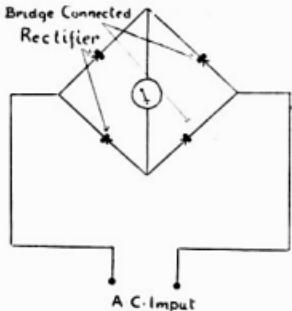
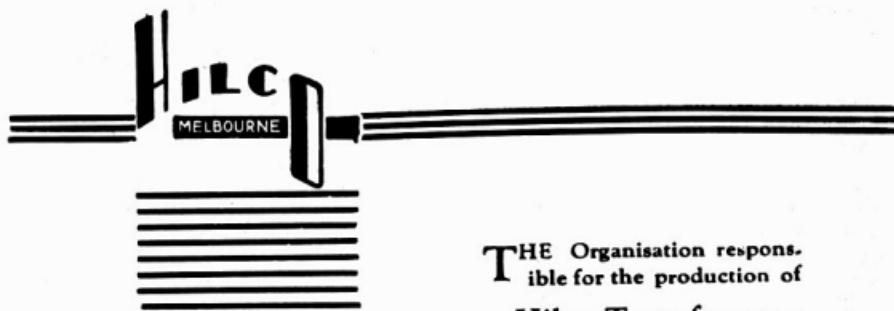


Fig. 5.

connected as shown in Fig. 5 though for certain special applications, other hookups are used. The rectifier passes a unidirectional current with a pronounced ripple of double the fundamental frequency. The moving coil instrument indicates the mean

value of the current passing which is .636 of the peak. As this is not usually required the scale is calibrated in R.M.S. values (.707 of the peak). Actually mean current is still read, but the arrangement is perfectly satisfactory until a current with other than a sine wave form is read. This is because the ratio of R.M.S. to mean values which is 1.11 for sine waves will vary with other waveforms. The instrument, therefore, is said to have a waveform error.

While this is normally a disadvantage, it can be usefully applied by using the arrangement shown in Fig. 6 to indicate whether this form of distortion exists. Connected to some of the alphabetically designated modulators heard on the amateur bands, it could show that the letter "B" can describe other things besides classes of amplifiers. In this circuit the meter reads only one half the wave and should the waveform be unsymmetrical about the zero line, the meter will give a different reading upon reversal of its connections as the other half will then be read.



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A further inconvenience is that the rectifier has considerable resistance and unfortunately this resistance does not follow the rule of behaviour set down by old man Ohm. On the contrary, it decreases with increasing current which means that the scale will not be linear, but will be bunched at the beginning. Another contributing factor to this non-linearity is that the rectified D.C. is nearly proportional to the applied A.C. at high currents but at small currents tends to be proportional to the square of the A.C.

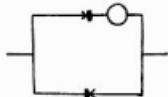


Fig. 6.

This characteristic of the rectifier instruments complicates the process of extending the range as different ranges would tend to require different scales. One method of correcting the low voltage range to enable a linear scale to be used is to place a reactance, represented by a condenser in series with the resistance given by the rectifier. As the voltage drops across the two components will be 90 degrees out of phase they will not be added directly but vectorially. If the reactance is much larger than the resistance the variations of the latter will not affect the resultant impedance to any great extent. This way has the disadvantage that the calibration will only be correct for the frequency at which it was designed. Another method is to use two scales, one for the lower voltage ranges and the other for the

higher. The lower ranges consist of one resistance in series and another in parallel with the meter as shown in Fig. 7. The higher ranges are unshunted as the rectifier resistance is such a small proportion of the total that its variations will not appreciably affect the result, and the scale will be reasonably linear.

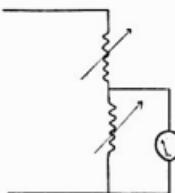


Fig. 7

Owing to the fact that the rectifier unit has considerable capacity, the reading, assuming a 50 cycle calibration, will have an increasing error of from  $\frac{1}{4}$  to 1 per cent. for each thousand cycles and the instrument will be useless at radio frequencies.

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(R. E. Jones, VK3RJ, Qsl. Manager.)

The address of the Polish Qsl. Bureau is:—P.Z.K., Warsaw, Box 520, Poland.

Geoff. Wookey, VK3YJ, after an absence of two years from the air, is now active on 56 mc. Another newcomer to this band is VK3KD.

A. R. Callander, for many years second op. at VK3ES, has taken over the station call, since Ern Yorston was married in February last.

Another station who we are pleased to hear is staging a comeback is VK3NQ, Jim Watson, Darlington, Vic. The advent of A.C. to his district has fired Jim's enthusiasm, so the "shadow" who has been working his callsign overtime had better seek another.

J. McKeone, now VK3JY, who had his old call, 3CV, snatched by a country B class station, is an enthusiastic

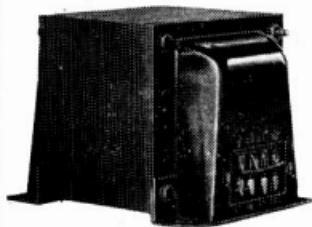
member of the new Northern Suburban Get-Together Movement. Tis rumoured that emanations from a station with a high mast and a Scotch accent in O'Heas road, Coburg, forced this bunch to band together for self preservation.

Ted Jenkins, VK3QK, is in the throes of rebuilding. New rig which promises to be a ball-tearer will consist of 42, 807, 807, HK154.

Cards for the following stations are obtainable from the Bureau in the usual manner:—3AH, AP, CA, CC, CU, DE, DJ, DQ, DZ, EA, EC, EI, EI, EK, FK, FM, FT, GD, GM, GN, GP, IL, IN, JD, JS, KG, KM, KO, KY, KY, LD, LM, LP, NA, NB, NV, OF, OI, OU, PH, QO, QJ, SD, SE, SF, SM, SZ, TD, TF, TG, TZ, UC, UO, VB, VK, VM, VX, VY, WR, XE, XI, XU, YG, YM, YS, XG, ZJ, ZL, XR, ZW, Dyson, Rowe, Freeman.

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## Correct Procedure - and How!

Time: 8 p.m. Friday. Scene: Headquarters W.I.A. (Qld. Division).  
by "Anom"

Three students are lounging around the door waiting patiently. The Secretary arrives and opens the door, whereupon the students follow him in and sit down quietly. Secretary proceeds to sweep up cigarette butts and lunch papers, clean the blackboard, wipe down the table and unpack his portable library.

Loud noise and raucous laughter are heard from without, and half a dozen hams enter the room. Kicking the chairs out of the road, they reach for the QSL cards, toss them around the table in complete disorder, and after muttering uncomplimentary remarks about the QSL Officer, sit down with disgruntled looks. Sundry others begin to trickle in, and punctually the Chairman arrives half an hour after the meeting was due to commence.

After settling, he ventures "Order, gentlemen, please!" with no audible effect on the din. "ORDER, GENTLEMEN, PLEASE!" and those in the front row drop their voices a few D.B. and continue, "SHUT UP, WILL YOU!" accompanied by a resounding smack on the table, and those at the back look up with a surprised expression. Before they have a chance to resume, he asks quickly, "Any apologies, gentlemen?" Silence, then a voice is heard, "I apologise for Herr Scholz having his feet on the table." The secretary leans over and threatens to tell the German Consul that Herr Scholz's great grandfather used to live next to a Jew. Herr Scholz promptly obliges, but it is noted that the air immediately around him has become ionized or, at any rate, has the characteristic purple tint.

The Chairman then calls for the Secretary to read the minutes, and when completed appeals to someone to move their adoption. The first silence of the night then occurs. All eyes are turned to the roof lest they

should meet the Chairman's roving eye. After a few more ignored requests, he sees Willy Washout, who is too engrossed in explaining to Bill Harston his theory of why 56 mc. signals don't get there, to notice what is happening. Says the Chairman, "Moved by WT, seconded by RY, all in favour carried. Read the Council report." While the secretary is endeavouring to make his voice heard, the rest of the members, who have been investigating the reason for the light shining through the windows of a nearby bar, after the door was closed at eight o'clock, troop noisily into the room. Reaching over the heads of those in the front row they grab the QSL cards, proceeds to reshuffle them, glare suspiciously at the QSL Officer, and resume their conversation in the back row.

By this time the Chairman has made his usual appeal for "Any general business." As, of course, this has all been previously argued out while the minutes and council report were being read, there is nothing more to be said, so silence again reigns.

As the silence is becoming oppressive, the Chairman again rises, and states, "I now declare the meeting closed. The lecture for to-night is-er-er," looking despairingly at the blackboard, whereupon the Secretary hands him a slip of paper. "Oh, yes, 'How the Ionosphere is Conized by Mr. Kelly.' Well, gentlemen, I think that this should prove a very interesting lecture as after performing such a feat Mr. Kelly should have no difficulty in telling us how it is done."

The lecturer then approaches the board, and after rummaging in the corner for a piece of chalk settles down for a stern struggle against the rising level of conversation. The older members draw up another chair for their feet and close their

eyes. The students for a while watch the figures drawn on the board, and then, as they can't hear what is coming from the front, listen to the yarns emanating from the back.

An hour passes, and by this time silence again reigns, broken only by the lecturer, who, unable to realise that the audience are asleep, thinks that he has quietened the opposition, and is getting warmed up to the subject. At this point, Mr. Guildford is awakened by the town hall clock, and, realising the necessity for drastic measures, arises and moves a vote of thanks. This is seconded by the Secretary, who has learnt the art of dozing with one eye open from supervising debates on Phone vesus C.W.

The rest of the members, on being roused, file out the door and, the lecturer being dimly conscious that the opposition must be starting again raises the gain a few notches and continues unperturbed. The President, being the last to leave, suddenly realises that he cannot leave the light going indefinitely and switches it off. This causes Mr. Kelly, who has been flitting from layer to layer with complete indifference to the true facts, to reflect that if he is going to reach "Ted's" before the toast is all gone, he will have to hurry.

Called at Vealls up Elizabeth street during the month, and found genial and always courteous friend White, the advertising manager, up to his ears in the preparation of the firm's big new catalog. Particulars of the new catalog will appear next issue.

## Third Annual German DX Contest Rules

The DJDC 1938 is based upon radio contacts between European amateurs at one side and overseas amateurs on the other side as it did in 1937. The traffic again consists of two parts:—

(1) DX-QSO between Europe, German included, and overseas with exchange of serial numbers. There is a difference between DX-QSO.

(a) Overseas-Germany.

(b) Overseas - Non - German Europe.

QTC Reports only can originate from DX-QSO as under (b).

(2) QTC-QSO between Europe outside Germany or Overseas at one side and Germany at the other side.

Time: The four week-ends of August, starting with the 6th. Each Week-end from Saturday 1200 GMT to Sunday 2400 GMT.

Frequency bands: All amateur bands. There is a special band scoring that time. The German amateurs are unable to transmit on 56 mc, 3.6-4 mc and 1.75 mc bands. Off band working causes disqualification.

DX-QSO contacts between Europe, Germany included, and Overseas. The idea of the DJDC is to get a maximum number of such contacts. Six-cipher serials are to be exchanged. The first three characters mean the RST (or RSN) with which the other amateur has been received,



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# Amateur Radio

the last three mean the number of the DX-QSO. The first DX-QSO has the number 001, then 002, etc.

The general call for the contest is CQ DJDC. Amateurs who don't wish to participate are requested not to answer CQ DJDC to avoid wasting time of the participants.

Only one DX-QSO is possible between the same stations per weekend and per frequency band. DX-QSO between European and German amateurs are not existing.

**QTC Traffic:** Each DX-QSO between European stations outside of Germany and Overseas may be the origin of a QTC-Report for each of the two partners of the respective DX-QSO.

By QTC-QSO between Non-German and German stations such QTC-Reports may be sent to Germany (and Danzig). QTC-QSO may be arranged by foreigners with Germany as it is wanted. Each time as many QTC may be transmitted as there are. Overseas Stations may also send QTC-Reports in connection with DX-QSO.

The QTC-Reports are to be transmitted in the following manner:—

- (1) Call of the worked station.
- (2) Local time of the DX-QSO in four characters (0001-2400).
- (3) The received serial.

The German partner of the QTC-QSO only has to verify the correct reception of the reports, f.i. 5 QTC OK. Points may only be claimed after such acknowledgment. From the above you will see: European amateurs can work with Germans QTC-QSO only. QTC-Reports never can show D- or YM- calls. Example: ON4AU reports to D . . . W6CUH 1515/589012. This means ON3AU to have worked W6CUH at any day of the contest at 1515 his local time, where he received the serial number 589012. This serial means with its first three characters that Y6CUH heard ON4AU rst 589, the latter three characters mean the 12th DX-QSO of W6CUH.

At his side, Y6CUH would be able to report this QSO in the following manner: ON4AU 2115/579005, that means, the QSO took place at 2115 W6 local time. ON4AU heard W6

CUH with rst 579, and it was the 5th DX-QSO of ON4AU.

**Scoring:** The scoring of the results is done by points. For each DX-QSO may be claimed:—

4 points between Germany or Danzig or Overseas.

2 points between Europe (except D, YM) and Overseas.

Each correctly acknowledged QTC-Report counts two points.

The points of this scoring are summed up, and, for European foreign amateurs and the overseas amateurs, multiplied with the number of the German districts worked on each frequency band. The German districts are indicated by the final letters of the call. There are 19 districts: final letters A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V. The 20th district is formed by YM4-Danzig. The different characters 3 or 4 are not regarded.

Hence it follows: A station outside Germany which did not work any German QSO is getting no points. European stations therefore are forced to send QTC to Germany for they can work QTC-QSO only with Germany.

In U.S.A., Canada and Australia (W, VE, VK) each district forms a country of its own. The same concerns, G, GI, GM, GW, etc.

**Awards:** There is no world-winner. The amateurs of each prefix zone are competing among themselves. The top-scorer of each country (district area) is awarded with an artistic diploma. Two awards are given if there are five or more participants.

Each competitor which sends his log in due time will get a nice verification card and a report on DJDC 938 regardless of his result.

The Amateur is the participant, not the station. If there are more than one operator each one has to make a log of his own.

**Log:** There are no entrance formalities for the DJDC, just send the DASD your completed log, which is made up according to the attached form. For the DX-QSO the log must show: Date, Time, Frequency Band, worked Station, serial number sent and received and the points claimed. For the QTC it is to show what Ger-

# Amateur Radio

man stations received them and at what time the QTC-QSO started. The heading of the Log must show the name of the competitor, address, call and an abbreviated description of the station. At the end the total score is to be calculated. Logs which reach the DASD after November 30th, 1938, can't be regarded. Each competitor is asked to send a log to give a complete look over the results of our contest. If you do so

you will get at least a nice verification card. Please send all your logs to—

Contest Manager DASD e. V., Berlin-Dahlem, Cecilienallee 4.

Best wishes and good success, The DASD Headquarters, D 4 Buf, DJDC-Manager.

Pse mark stns wkg outside the bands! Don't contact them!

## LOG

Final score: \_\_\_\_\_

Call: \_\_\_\_\_

Name, Address:

TX:	RX:	Ant.:	Nr German Distr wdk:
Date Time	Freq band	worked Station	Serial numbers sent received
2354	14	W2GVX—1	569 001 578 005
2358	14	PY2AL	547 002 358 003
0235	"	D4BAF	— — — —

(Examples for a European amateur)

Nr. German distr. wked:

Sum of points

Total:

(Please enter total also in heading of Log!)

The DASD must have the log not later than Nov. 30th, 1938! Play safe Om, send early!

I state I have abided by the rules of the Contest and that my total score is true and proper.

I know that I may be disqualified if I have hurt the rules of my licence.

.....  
Signature.

Send the log to: DASD, Contest manager, Bln.-Dahlem, Cecilienallee 4.

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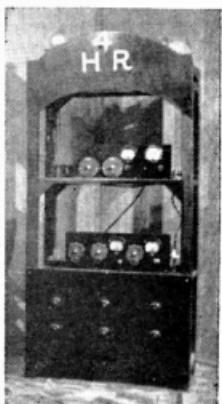
## Station Description

### VK4HR

VK4HR has been licensed since June, 1931.

The first rig built was a Hartley with a 210 as oscillator tube and a pair of 250's in parallel as modulators. Activity was confined mainly to 80 and 40 metres.

After about one year of operation on short waves, 4HR was rebuilt to xtal on 210.2 metres and the rig con-



sisted of a 47 xtal oscillator capacity coupled to a 46 buffer capacity coupled to a 210 in the final. A pair of 250's in push pull were used as modulators with a 3 stage amplifier and Reiss mike.

After about three years of 200 metre operating the operator was bitten hard by the dx bug and consequently the gear was rebuilt to operate on the 20 metre band the line up being a 247 xtal oscillator, 46 double 46 double and 210 final capacity coupled throughout and using an 80 metre xtal.

The rig has been rebuilt again lately and is link coupled throughout with a 42 oscillator, 6L6G doubler, 807 final, using a 160, 80 or 40 metre xtal; the 6L6G operates as a buffer stage and as a doubler stage on 20 with the 40 metre xtal. The

42 oscillator is used as a Tri Tet for 10 metre operation with the 6L6G doubling to 10 and the 807 as an amplifier on that band. On 5 metres the 807 operates as a doubler and is coupled to the aerial with reasonably good efficiency.

The modulator is a pair of 250's and an N stage amplified with Reiss mike.

The 160 metre receiver is a 2 tube electron coupled job with 6L6 and 42 valves.

The 80, 40, 20, 10 metres receiver is a 7 tube super with 6D6 RF, 6C6 1st detector, 6D6 HF oscillator, 6D6 IF with inon corned air tuned IF transformers, 6C6 biased detector, 6D6 beat oscillator, 42 audio.

The receivers for 5 metres are a 2 tube super regenerative with 76 and 4 valves and a 6 tube set with 56 HF oscillator, 57 st detector, 58 IF, 57 2nd det., 27 beat oscillator and 2A5 audio.

The 160, 80 and 40 metre aerial is a 133 foot end fed Heitz. For 20 and 10 metre operation a half wave current fed vertical zepp (on 20 metres) and 2 half waves on 10 metres is used.

On 5 metres the aerial at present in use is a half wave matched impedance clipped on the tank coil of the 807.

DX worked is 82 countries to date.

Best dx on 5 metres is 110 miles with portable equipment approximately 3 watts input while QSO with 4AW, 4CG and 4UZ in Toowoomba have been QSO'd from Springbrook and Brisbane, a distance of 90 and 75 miles approximately. 2GS Murrlumba has been worked from Springbrook, a distance of about 15 miles.

WAC, WLW, HBE has been made also on 10 metres.

Three cups and a pennant were won at the last annual dinner of the Queensland Division of the W.I.A.

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# Queensland Personalities



## VK4 Personalities

In a daily paper recently a Turkish Bath Service featured the following announcement: "Separate Department for Ladies except Saturday and Sunday nights." And I want to say for myself that the request that I say something about the gentlemen on the opposite page, puts me in the same position as the virtuous lady who unfortunately called at the above advertiser's address on a weekend night. I am full of hesitation. However, hurry is the essential requisite if a tale is to be told of the VK4's who keep in motion the machinery of the Queensland Division, so perhaps I had better begin. To tell the truth, the time is exactly 9.30 p.m., Friday, 22nd July, and if this doesn't reach Amateur Radio's magazine committee by to-morrow, the praises of the Queensland heroes will have to go unsung.

4AW.—Arthur Walz, Sandgate road, Nundah, born 1908, single. Arthur is one of the old soldiers of amateur radio. Became interested in radio during his school days, and rumour has it that he somehow acquired a P.M.G. telephone receiver to listen in to spark station VIB on a crystal set. He has been actively associated with the VK4 Division almost since its inception. During the last six years has been the Division's president and shows no sign of weakening under the strain. Conducts a radio business on his own

account and is one of our leading public address amplifier men. The rig, when it hangs together, is 2A5-46-807 and push pull 809's. The RX is a super and the antenna a time honoured Zepp. Arthur is a positive force in the Division and attends to its welfare unsparingly.

VK4UU.—Bill Chitham, Doggett street, Valley, born 1911, single. Bill is one of the Division's anomalies. Been off the air for some considerable time, but never misses a meeting. Has been guardian of the Division's funds for the past few years and always voted an excellent treasurer. Bill's big days in radio were around 1932-33 when he used to pile up big scores in the W-VE contests. Of late he has alienated his affections—motor cycling is now all the go. When not balancing the VK4 budget, Bill spends his time in the drug business. His chief characteristic is that he is never discouraged, never depressed, never tired. Just take a peek at his bright smile.

VK4RT.—John Thoreby, Baver street, Annerley, born 1913, married. John spends more time than any other member of the executive in serving the Division. Is now in his second term of office as secretary and has proved himself the ideal man for the job. When John comes to a meeting he has everything at his finger tips. Ask the interrogators. Secretarial duties do not leave much time



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for DXing, but occasionally a good signal is emitted from a 6A6-807 push pull 10's combination. John is always praying for rain. More rain means more grass and better times. No, John is not a grazier, he's a lawn mower specialist. Nearly forgot to mention the XYL. Think she has a lot to do with the secretary's success. May she always think kindly of the Division.

4AP.—36 Bramsten terrace, Herston, born 1906, married. Drifted into radio around 1917 and took a transmitting ticket in 1932. Owes what little progress he has made to Q.S.T., Amateur Radio and other amateurs. Always regrets that he ever took up radio when his final grid drive won't exceed 50 mills. Listens on headphones instead of a speaker because his wife is highly musical. Spends most of his time on the higher frequencies because he likes to be alone. Alf is publicity

officer for the Division. Spends his daylight hours in a large furnishing house.

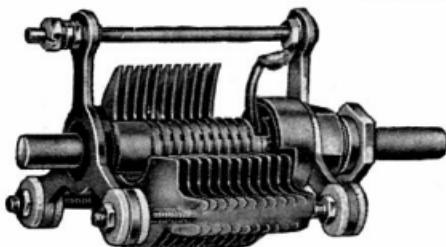
4UL.—Paul Hubsher, 98 Commercial road, Brisbane, born 1917, single. When one visits Paul's shack it is easily seen that it takes a structural steel engineer to build a real rack and panel rig. The raid rig is worth going miles to see. Neat, efficient and workmanlike in every respect. The 6A6-6A6 exciter unit is followed by an 807 and a 210 final—the only one of its kind for no matter what is pushed through it the plate never blushes. Paul is country librarian and prior to that was Q.S.L. officer.

4UL.—Jack Bates, 233 Arthur street, Teneriffe, born 1913, single. Jack promises to be the star VK4 DX man of the future. He is WAC, WBE and will be WAS when three eagerly awaited cards arrive. Dur-

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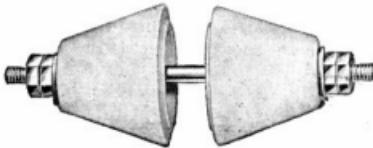
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13.5 m.mfd. 192 m.mfd.

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Cones 1 1/2 in. long, 1 1/2 in. max. diam.  
Cat. No. 1018, price 3/6 ea.

## Amateur Radio

ing the last three years he has acquired a fine station. The TX is a 2A5-807-801 combination and the RX, a joy to see and operate, employs 11 tubes. Jack takes his radio seriously, so much so, that he was busy chasing DX when the photographs were taken. Has just relinquished the job of Country Zone Manager and taken over the VK4 Q.S.L. Bureau. When the Europeans come through during the early afternoon, Jack is busy attending to the wants of those who worship at the shrine of "Lady Nicotine."

**4SD.**—Arthur Sharland, Sandgate road, Bondall, born 1910, married. Arthur is a newcomer to radio, but by far one of the Division's most enthusiastic executives. He is the man who posts your "Amateur Radio" around the beginning of each month. Get in touch with him if your copy is not arriving regularly. In the June issue "Air Raider" almost hurt Arthur's feelings by saying he was trying to raise some DX. During the month in question VO and VP7 were raised. The rig that raises 'em is a 53-6L6-210 outfit. A 6 tube super takes care of reception. When not worrying over radio Arthur has the trouble of taming the hot Queensland temperature—in other words his real business is Air Conditioning.

**4RY.**—Bill Haesten, Riverton street, Clayfield. Bill refused to give his age so we will casually hint that the photograph more than does him justice. However, we do know Bill is old in radio. His association with the Division dates back more years than one cares to remember and it is good to see him holding office again. Has the neatest looking station in VK4 and always has on hand portable gear that does work. Present air activities are on 14, 28 and 56 mc. The rig consists of 47-6A6-807. Bill has more time for radio than most of us and gets the maximum amount of pleasure from his hobby.

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## VK-ZL CONTEST

(By ZL2LB, Contest Manager, 1937)

As was the case with the previous VK/ZL contests, the event held during October, 1937, was an outstanding success. The contest was organised by the New Zealand Association of Radio Transmitters in co-operation with the Wireless Institute of Australia.

The committee wishes to thank all of the overseas societies for the manner in which much publicity was given, and all the competitors whose support enabled the contest to be so successful.

Conditions appeared to be very changeable during the Senior weekends, but were better during the Junior ones. 28 mc. was very poor this time, compared with the previous year, and there were few contacts made on that band, interest being mainly on 14 mc.

**SENIOR.**—The winner for ZL was ZL1DV, who was incidentally the top scorer in the previous contest, with a total of 71235 points. VK2ADE was the successful one for VK with 83430 points. Both are to be congratulated on their very fine totals.

**JUNIOR.**—In the Junior Test, ZL2QA with 72192 points and VK2DG with 32800 points were the winners. Congratulations also to both of these competitors.

**RECEIVING.**—The receiving section was well supported, particularly overseas, German and British listeners being well to the fore.

### COMPETITIORS' COMMENTS.

The highest score from W was from W6CXW, who amassed the excellent total of 11460, while W6NKY is next on the list with 7680 points.

G8PF entered the Senior Section with only an input of 3 watts, and returned the very creditable total of 1512 points.

W9TB, who just failed to top the W9 entrants, was pleased that there were no serial numbers to exchange. W3EVT wishes that more use was made of QMH, QML, etc. VS1MB was unable to hear any ZL or VK

(Continued on page 24.)

## VK3MR DX Notes

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Conditions for the past month have been exceptionally poor on all bands even up to 80 mx! The 14 mc. band has let us down badly this time, only the usual W's and the late afternoon Europeans are worked with any consistency, but nothing up to the standard of the same time the past three years. Similar conditions are reported from other countries as well, and our own local dx men are having a bad spin, especially on 20. No sign of 4JU even! 2DG, who is always to the fore in this dx racket, must be congratulated on winning the junior section of the 1937 contest, also 2ADE in the senior. Be seeing you chaps later! hi!

Ron of 3KX has now qualified for the "Century Club" with 119 countries and 102 verified! His latest fone contact being CN8MA, 14080 kc. Still has great faith in the two half waves in phase and can't see his 8JK doing as well for him. 2NY reports working OA4AI on 7 bc. on fone! 3TL also worked this same station a few months ago. 7 mc. is reluctantly showing signs of "waking" up, and we can look forward to some early morning European dx on this band in the near future. An old CW ham, J5CC, has come to light with some excellent fone on the HF end of 14 mc. and speaks good English. It is understood that English is spoken in all countries except England and America! VS2AE, an ex-ZL, is very active on about 14350 kc. at late evenings, modulating pair of RK20's and an 8JK ant. Can't work his home country. Nothing outstanding is reported, and there seems very little activity on the dx bands. 80 mx. seems full of fone; all wondering if there is anybody else playing at the "fone contest!" Several chaps heard testing on 160 mx getting ready for the contest on that band. Printer's error in last month's notes; "dogs" was included instead of dots!"

A short review of our own October dx contest will not be out of place in this issue. The first contest was run in conjunction with the Melbourne

Centenary Celebrations in October, 1934. Under the able hands of 3ML as contest manager, and widely advertised celebrations, this test was a wonderful success, so much, that there were hundreds of overseas requests for its continuance. As Australia was considered to be among the rare countries those days, and inspired by the occasion, the news spread throughout the world, and consequently it was well competed for. To further the event, the presentation of the prizes was broadcast from 3DB. The prizes were very substantial—1st in senior test, 852; 2nd, 800; 3rd, set of Siemens meters. The Junior Section was a complete set of Phillip's tubes, which was won by 3HL. The first three in the senior were 3MR, 3GQ, 3JQ. It was a real battle, and lasted from 10 a.m. Saturday to 10 a.m. Monday the four week-ends of October. Beards were worn long those days! It seems that I displeased the judges the least and that is how I got my 852! This test has been run ever since during October, with various alterations to the rules and times, with the idea to make it easier for all to have a go and not such a hardship as the first, and so long as the contest committee realise that it is the man behind the key that counts and not a test of the transmitter so much, this test will continue to be popular with overseas as well as locals. The winners of the other tests held are as follows:—1935: Senior: 3EG, 3MR, 3KX; Special Section (500 points per 28 mc. contact): 4BB, 3EG, 4AP. 1936: Senior: 3EG, 2AE, 4BB; Junior: 2HV, 3HK, 2YC; and the 1937 just announced are: Senior: 2ADE, 4BB, 2HF; Junior: 2DG, 3MR, 2ADE. The junior section is limited to 25 watts. 3EG's wins were outstanding and left us well behind! 1935 test was loosely worded, and there was much doubt as to the interpretation of the 500 points bonus for 28 mc. contacts, so the committee decided to award two prizes. 4BB won the 500 points 28 mc. contact as he did excellent work there as well as on the other bands.

## 28 and 56 M.C. Notes

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(By A. Pritchard, VK3CP).

The ten metre band has been very quiet this last month, except for the usual phones from the States, and these only increase to the punch we have become accustomed to hearing, for approximately an hour during the mornings, i.e., 11 a.m. until noon. The New Zealand stations have excellent quality and punch, and show that this distance, during the winter months, for ten metres, evidently gives maximum signal strength. The local stations in some cases are usually only R2, 3, and yet are received in ZL at R9, and VK3NP being very obviously in the skip. None of the Australian States have been heard during this month, except VK6MW, who has R8 phone and many ZL contacts, although the lads from U.S.A. call and work VK2's, especially 2NY and 2YQ. On Sunday, 19th June, several 20 mx harmonics from VK2 were R8 at 11.30 a.m. for a short time, but no fundamentals. The harmonics from JNM3 and PLK reach R6 during the mornings, although no Japs have been heard. Sunday, July 10, was the best and most interesting day for strange and rather abnormally good conditions. At 9 a.m. the band was dead; 9.15 a.m., several New Zealand cw 20 mx harmonics, the best being ZL2UV: 9.45 a.m. many faint carriers from the States, which built up to the band full of R8 phones at 11.50 a.m., when a terrific hiss was noticed at least a dozen times, rising from inaudibility to R max. and down again in cycles of a few seconds. This hiss was exceedingly heavy ionization somewhere and evidently not locally, because earthing the antenna showed no sign of static discharge during the rapid hiss cycle. Listening to R9 phones showed that they were completely swamped during the hiss peak, but their actual strength did not decrease. The band was full of R9 phones at midday, and all had faded out by 5 past 12. Any explanations? I understand that the strongest sun spots since 1870 are at a maximum at present. But New Zealand stations were not affected in any way, and were still the same

strength for the usual hour or so later. VK3VM has four stages, e.g., 6V6G 40 xtal, pair of 6L6 doublers and an 807 final modulated by a pair of 42's in class ab. A 20 metre figure 8 beam (2 vertical  $\frac{1}{2}$  wave sections) phase switched by relays, is used on ten although the high angle radiation characteristic, when on this wave will not be the best for dx. ZL2BE reported that ZL1IR on 5 metres has been heard in Wellington, an air line distance of 400 miles; no details of the outfit are to hand. Talking of 5 metres, VK3UK will have plenty of xtal controlled power on that frequency in the near future, the co-starting with a low drift 20 mx xtal by VK3BQ. W5HGK is a new ham (we are told) and the KW input job has a 6L6G COx, 807 doub to 10 mx, 808 puffer and PP 250 TH final. The modulator has a Shure xtal mike, into a 6S5, 6C5, 6M7, Push Pull parallel 6A3's and Class B 204A's as modulators. An 8JK beam completes a line up and a half. The beam described in last month's notes, i.e., ZL3DJ's director, di-pole, reflector combination, is fed by the Y, matched impedance system. The centre of the dipole has an impedance of only 8 ohms and the Y match is obviously the best feeder to it. ZL1HY is fairly new to 10 mx and is using a bi-push exciter 53 P. Pull, 53 Push Push, 6L6 doub 10, HF100 final which is grid modulated by a 2A3—xtal mike—A Jones all band antenna gives us good signals when other ZL's are fading badly (Jones 67ft. flat top and single wire feed). At present the most consistent W's are W6GCX, W6PNO, W6PDB and W6—portable W2JKX, using 6F5 co, 6L6G doub, 809 final, pair of 6L6 Class B and HRO receiver—a nice portable! W6MOU puts 500 watts into a pair of 35T's and uses a pair of heavy duty Taylor 203H as modulators; he is often the only readable dx on the band before the peak periods. TI2FG is the only other dx for the month apart from the many K6's.

## LOWERING FILTER CHOKE COSTS

(By 3JX)

When using several stages off one power supply considerable voltage will be lost across the power choke unless it has very low D.C. resistance, also the filtering may be poor due to the choke core becoming saturated.

The circuit shows a simple method to overcome both these difficulties, and it will probably be cheaper to buy several small B.C.L. chokes than one large transmitting choke.

With the one mike connected as shown by dotted lines, the voltage output will be greater, but the life of the 83 may be shortened if the current drawn from it is near the maximum current rating.

(Continued from page 21)  
stations on 28 mc. SU1WM wants more inducement for the 28 mc. band. OA4J returned a better score

in the Junior test than in the Senior, which helps to prove that it is not always the high power that matters.

Many entrants made a mistake in reading the closing date of the logs. Only VK and ZL logs were to be received here by December 1st. All others by the end of the year.

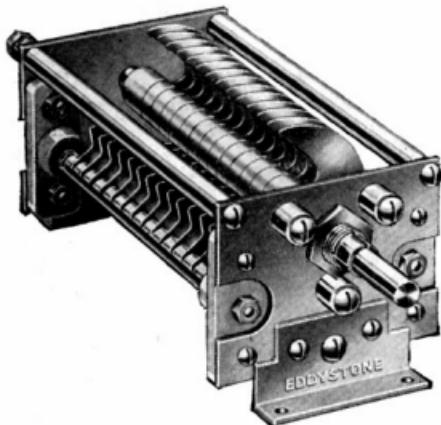
VE3AU, PK1BX, OK2OP, OA4J, J2MI and PO0UN all were highest in both sections, but are only eligible for one award. NY1AE sent in a very fine neat log.

Thanks are due to both the W.I.A. and D.A.S.D. for putting the logs of their entrants in order before sending them on. Many cases were noticed of off frequency operation, rough notes and very poor operating. All seemed in favour of the system of scoring, while it was about even on the question of the duration of the contest.

VE3AU spent the whole of the last hour trying to raise his first VK4 and managed to work one in the last three minutes.

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## Divisional Notes

To ensure insertion all copy must be in the hands of the Editor not later than the 18th of the month preceding publication.

### N.S.W. Division

#### WAVERLEY RADIO CLUB NOTES.

(By (2AHJ.)

Great nervous tension is being experienced by the club members in anticipation of the arrival of the new club transmitter. Extensive experimenting has been done by those participating in the construction of the rig in the design of a thermostatically controlled crystal holder. The finished product should well merit the delay, and, if all goes well, the rig should be on the air within a few weeks. At the weekly meeting held on 5th July a lengthy discussion was held on the subject of alterations to the club room so as to provide a real businesslike operating position for the new station.

The time is drawing close for the 80 mx field day, to be held on 17th July and consequently the members' interest is mainly centred on the alteration and improvement of their D.F. gear. Many points of interest were learned when Mr. Lusby, 2WN, delivered a talk on D.F. theory and practice. At the same meeting the club was fortunate to have, as a visitor, Mr. Miller, of Qantas Airways, who has promised to become a member of the club. Mr. Miller is also an authority on the subject and should provide some very interesting talks.

With the coming of winter it was moved that warm refreshment should be served at all future meetings. The idea was heartily approved of and the social committee took charge of the matter.

A small technical library is to be added to the clubs and should be a great benefit to any member who is going for his AOCC. Books and periodicals will be available to all members and new literature will be purchased from time to time.

Thanks are due to 2AFG for having presented the club with a very FB code practice oscillator—wid built in power supply 'n all. Nice work, Jack—may ur 6L6 become an 807.

2AFZ is full of glee now that he has got his new super to perk on 40. Is heard mostly on Sunday nights and takes up as much of 2AHJ's dial as Eric does the clubroom.

2ABS devotes his time nowadays to furthering the science of talking pictures. Should have some practical results soon, Jack. How about giving the gang a demonstration. Also heard that he intends cutting some figures (including his own) on the ice.

Bill Stanley's ideas have changed, we notice. Instead of spending his shekels on new toobs he spends them on a YL—pore Bill.

2AHJ has done away with a fone monitor and instead sends the OW inside to monitor on the bath heater!

#### NORTHERN DISTRICT ZONE NOTES.

VK2KK.—I have not seen you for some time Matt, so very little to say on your doings, but it is up to you to let me have some news, so I can carry on with these notes.

VK2KE.—Well Bill, no doubt you will be very active soon, seeing that you have been buying 82 and 46 type tubes to improve the outfit; your exams will soon finish, and give you all the time you need, using 59-46-46 line up in the rig; receiver is a 4 tube T.R.F. job.

VK2KZ.—Very little doing I guess Max, due to out of work, but a low powered rig in use, using small beam type tubes, and some new ideas from "Jones Handbook," will send it along to A.R. next month as the idea is good but by no means new. Doubtless it would interest those who want to get to 10 and 20 metres using 80

## Amateur Radio

metre crystal, 1 power pack B.C.L. type, 2-6L6G tubes and 1-280 rectifier, the output on 20 is respectable, but we will have to try it on 10 later.

**VK2YO.**—Well, George, after yesterday I guess we could write plenty, as spent ten hours helping to put up a pair of 50 foot sticks, and a full wave 40 metre zeppelin antenna. George is using 6L6G tritett, 807 buffer, 800 in the amplifier, class C, modulated by 56-56-45-46PP speech amplifier about 40 watts input, receiver T.R.F. 4 tube but a 6 tube super in the making. He buzzes about in a new Ford 10, CD-149 so if see it Newcastle, make acquaintance.

**VK2XT.**—Well Bill, happy trip to Suva, as I guess you will be nearly back by the time A.R. gets these notes. Bill is not yet active due to living in Newcastle but working in Kurri, so you have half Newcastle, and so has Kurri.

**VK2DG.**—Maybe we will find you home some time Keith, sorry to miss you last week, called to pick you up for Cessnock trip, but will try again. In the rig uses 2A5, 2A5, 46, 808, 45 watts input and grid modulated, receiver 4 tube T.R.F. has about 96 verified countries and 109 worked, fine going! He is now busy making test equipment.

**VK2YL.**—Cannot say much about you Harry, called on you last week, but you were out so nil to say on your doings, that also applies to you, Chris, of 2PZ.

**VK2CW.**—We thought a ship had taken to land when we saw 2CW, but turned out to be an 8JK beam antenna for 14 mc. Bill has also shifted his shack to a more suitable place and like all shacks you can just move about in it due to radio gear, etc.; has a 6 tube super going and the rig is 2A5, 46, 46 PP line up about 30 watts input, unfortunately out of work, so just carries on as best he can.

**VK2CX.**—No word from you Jack on your doings, I guess its YLs again, but turn the nose of your old buggy west and drop in and we will get the dope.

### ZONE 5 NOTES.

(VK2IG Feels Chirpy.)

**2EU.**—The cold wx prevents a gap in the ham racks. His rig's gone haywire, but the rivers frozen over.

Ought output, ought modulation and ought input.

**2QE.**—Making too much coin and thus too busy to be on.

**2OJ.**—Looks as if he has pinched the body off a V8 and has the modulator in it. Anyway it's screened, totally enclosed, ducoed and polished.

**2AP.**—Busy inviting his colleagues to the shack for qx's, but as is usually the case the condx always letting him down.

**2AFD.**—Amateur found dead?

**2IG.**—Using new ant and fb for w. but osc. has to be on for about half an hour to stop freq. creep.

### WAGGA NOTES.

(By courtesy of 2AEO, Wagga.)

**2VO.**—Now owns an xmr. 42, 45, 210 and a 4 tube TRF rx. It was decided to have a social evening every month. The night chosen was the second Tuesday and the beano starts after the usual weekly meeting. The new vice-president is Mr. Moye in lieu of 2RH, who is now in Young.

**2MP.**—Whilst travelling per train heard a plaintive CQ being whistled by one who was roving the corridor. A pleasant conversation followed.

**2FQ.**—Still pottering round on 40. How did the exams go Doc?

**2AID.**—Hasn't been doing much now he has a motor bike. How's the galloping bedstead Stan?

**2AIB.**—Complains bitterly of the condx. Thinks he'll apply for more power. Has installed a very efficient click filter which he evolved after much experiment.

**2AEO.**—Just doing this and that, here and there, now and then. Wants to know how red the grid of a 210 must be before it's overdriven, hi!

**2JL.**—Of Coolamon, has been heard a lot on 40 lately. What's doing down there, OM?

### Victorian Division

#### PHONE SECTION.

(By J. C. Kerley).

The annual meeting of the Section was held at the Club Rooms on Tuesday, 28th June, 1938, with 3CB occupying the chair.

The main business of the evening was the election of office-bearers for

## Amateur Radio

the ensuing twelve months, and resulted in the following being elected:—Chairman, W. Sievers 3CG); hon. secretary, J. C. Kerley; hon. assistant secretary, H. Simonds. There being only four nominations for the four vacancies on the Allocations Committee, those nominated were returned unopposed, and are:—J. C. Kerley (Chairman), Messrs. Dinan, Smith and Timmins. The Section representative on the Council is 3CB (W. Sievers).

A considerable amount of discussion took place over the instructions received from the R.I.'s department with regard to the use of "V.K." and "Experimental" in call signs of the B.C. band stations. It was decided to instruct the chairman to get a full interpretation of the instructions, and to notify members when he had done so.

The Chairman of the Allocations Committee read the annual report of that body, and at the conclusion of the reading the allocations for the month were read and frequencies allotted for the month of July. The meeting closed at 2225.

### KEY SECTION

(By 3UH)

At the July meeting, Mr. Cunningham maroused considered interest by giving details of a transmitter constructed from parts supplied by the various trade houses. This transmitter is to be shown at our exhibition and afterwards presented to the Victorian Division.

3OG.—Getting fine results with 56 M.C. beam antenna.

3EB, 3DP, 3DT, 3TB—Still messing about on 56 MC.

3QW.—Has built Radiotron super, but still getting bugs out of it.

3UM.—Rebuilding rig into relay rack with 6V6G, 6L6G's push push, push pull 809's for 10 and 5 MX.

3ZV.—Complete rebuild and may be on by Xmas.

3ML.—Has just completed a new rig, 6V6G, 6P6, 809 to be presented to the Victorian Division after the forthcoming exhibition.

3EQ.—New tube, new QRA, lots of kick.

3JI.—Working locals, DJ scarce.

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## Amateur Radio

3IW.—Now off the air owing to poor condx.

3EN.—A bad case of DX-itis.

3ZU.—Another fone hound.

3ZD.—Fone mad for 6 months, now on CW again.

3IG.—May be another fone bird.

3DA.—Working plenty of W's on 40 MX, but wants to know why 20 MX is called the DX band.

3KQ.—Rebuilding into standard ARRL racks with hand switching set.

3ZC-3MR.—Recently conducted Melbourne-Sydney chess match with 2TI and 2DR.

3ZR.—Working CW and fone on 40 and 20 MX, and very interested in DX.

3HK.—Has W8JK team (4 half waves long) in action on 14 MC and got R8 from O.K. and F8 on first trials.

3UH.—Building new Super 8 tube with a Xtal gate to counteract local fone.

As we are beginning a new year, perhaps a few notes on the doings of the past twelve months would not be out of place.

The most consistent station for the year was YK3AM, whose present quality is probably the best we have heard for a long while.

The return of 3DH to the gang during the year brought another good quality station back on the air, but this station is not, as yet, the DH of old.

3RI has had a few ups and downs and seems to suffer from too much "multiple control." One man on the job would probably produce more consistent results.

3GK, who is doing good work at present, breaks down on station conduct. A little stricter supervision of the running of the station would certainly bring a rise in position on the order of merit.

More about the gang next month.

(By 3JO)

The outcome of the discussion on the amalgamation with the H.F. fone section showed that the majority of members were not favourably disposed towards the move at present. They were, however, willing to join forces with the short wave group, and this move was approved by council. The short wave group has been absorbed into the U.H.F. section and

meeting nights are as usual—the third Tuesday in the month.

### Amateur Exhibition.

This section is to play an important part in the exhibition to be held in the W.I.A. Rooms early in August, and we have promised to enter a working exhibit of U.H.F. equipment and to demonstrate duplex working with a portable station on 56 mc. 3DH will provide the portable station, while other members are polishing up their gear to provide satisfactory working the W.I.A. Rooms.

The cold weather has put an end to the activities of 3DH portable and Ivor is turning his attention to installing some U.H.F. gear at home, but is handicapped by lack of room for an effective antenna system.

3JD, 3EM and 3RI are keeping the band alive, while 3OT, 3XM, 3GG, 3RJ, 3OJ and 3JO manage to appear at various times.

3OG and 3MS at Essendon have been worked by 3JD and Co., but their signals are not readable here, nor are they able to hear 3JO. This is due apparently to the directive antenna used by 3OG, and someone suggested that the pub, through which the sigs. must pass to reach the antenna system here, was responsible for quite a lot of absorption!!

The August meeting is on the 16th, and as the important business of election of office-bearers for the ensuing twelve months is scheduled to take place, a large and representative gathering is required and expected.

(3ZK-3HX.)

The star sensation of the month was the announcement of Ken's, 3KR, engagement to June, one of 3WE's famed twins from Omeo. It was reported that several Northern Zone hams were treated for shock after reading an edition of one of the daily papers. Say, Ken, look what Amateur Radio brought you.

3EP finds it a little cold out in the shack these evenings, so Ted is not as active as previously. Spends some time on 20 mx.

3BM, we learn, has been very active without being on the air much. Being in sole charge of ??? acres. Bruce has been kept busy, but not

## Amateur Radio

too busy to find time to erect a 90-foot stick, sundry beams, and work a few Yanks on 20 mx.

3OR will, we suppose, be very busy keeping the Bull in order at the Kerang Apex Ball.

3CE has been very busy on the farm, but thinks now that he will be able to spend more time at radio.

3NN heard the first time for some time, with a very respectable signal.

3WN puts in an appearance now and again, with rather a good signal. Let's hear you some more, John.

3HY, at Murchison, has spent most of his time on 20 mx. Doc is building a decent sort of mast from which a rotatable beam will be strung. Is at the moment using a pair of 6L6's in the final.

3EC spends most of his time on 40 mx. Ern is considering all sorts of improvements, including a new receiver.

3DU-TC is still holding the fort at Clydesdale with his portable rig. Doug is president of the local Dramatic Society and threatens to give us a full dress show one night when he installs television.

3IH has now replaced his 6P6 with a 6A6 and running the heaters from the mains. Fone quality excellent.

3ZK has now finished with commercial radio for a while, so there is another occupied frequency on 80 mx.

3HX is now taking more interest in Ham Radio; has a few more pet ideas which will probably do everything but what Tom wants them to do.

(VK3HG)

3JA—Has the misfortune to have

his genemotor go west and is off the air after a period of activity working some good DX.

3WT—A newcomer with a very nice signal on 7 mc., although not with very great strength yet.

3GQ—Our sympathy goes to Frank on the death of his father recently.

3SC—Active on 7 mc. phone, with quite good signal.

3TW—Nothing heard from Tim lately, but guess he is as active as ever.

3OW—Showing signs of returning to the ham ranks again soon, after his sojourn into commercial radio.

3HG.—Still doing well on 14 mc. phone, working lots of Europeans in the afternoons. Also active on 3.5 mc. and having a QSO or two on 28 mc. when conditions suitable.

There is still no definite news of our convention, but we hope it will take place soon and the town in which it will be held will probably be Camperdown, where Mt. Leura is very suitable for 56 mc. work. A practical demonstration of 56 mc. gear will probably be arranged for the convention. Very little news of the activities of other stations is obtainable this month. Conditions on the various bands have been fairly good, especially 14 and 3.5 mc.

## Queensland Division

The last monthly meeting at the Division's headquarters, Celtic Chambers, George street, City, was deserving of better attendance. Far too few turned up to hear the really excellent lecture given by Mr. Pat Kelly. The subjects covered by the lecturer included "Lorenz Landing Beams,"

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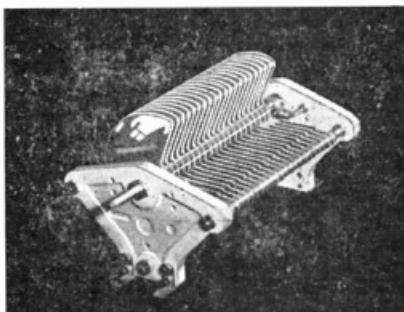
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"Homing Beacons" and "Amplification on the Higher Frequencies." The description given of the Lorenz type beam, both in theory and practice, was particularly interesting in view of the fact that beams of this nature have been put into operation at the Archerfield Aerodrome. At the next monthly meeting the lecturer will be Mr. Vern Kinnar of the P.M.G.'s Department.

For the information of country members it should be mentioned that the W.I.A. men selected by the Department for the Vigilance Committee's second term of office are 4AW, 4HR and 4AP.

The secretary stated that although it was originally intended to have 4WI operating from the first Sunday in July, the reopening of the station had been postponed pending permission from the Department over the transfer of 4WI's licence.

## PERSONAL DOINGS.

When DX is quiet give 4PX a call. Arthur's a good "op." and always ready for a chat.

4GK is on the air at Ithaca, his new QRA. Don't think the new location will trouble "Mac." The weekly sked with VE5BI is being maintained so 4GK can safely be expected to more than hold his own with the VIB DX gang.

Don't build a new super RX without first seeing the one at 4UR's. It has everything—including eye appeal.

A little impromptu meeting at 4UR's shack is not likely to be forgotten by 4GK, 4HR, 4KH, 4AP, and 4UL. The last named kindly arranged for the boys to actually witness the fabrication of some of the steel work for the new Storey Bridge. The evening was as enlightening as it was enjoyable.

4AP promises to make a noise shortly with the aid of a new modulator. The outfit uses a pair of 46 valves in class B. To date three speakers and a 70/- modulation transformer have been ruined so the new modulator evidently has that "plus a little extra which others haven't got." The quality is fair. Even the dog can recognise "his master's voice."

News is wanted of 4BB and 4EI. Here's timely warning that you may be wanted for the next Fisk Trophy Contests, O.M.'s.

4HR has had a bad break with xtals. The last one, product of a leading VK rock grinder, proved to radiate on an unlicensed frequency.

A well known VIB ham has his eye on an 808. The limit is 50 watts not 200, o.m.

4UU, guardian of the W.I.A. funds, seldom misses a meeting at headquarters. What about selling the motor bike and doing some more ether busting?

4WT is finding difficulty in neutralising a straight P.A. on 56 m.c. Keep the leads shut is the golden rule for "five."

What about a line 4JX? Tell us what DX is like in Toowoomba.

It's good to hear 4EL and 4RF rag chewing around 30 w.p.m.

4FB is still sorely troubled with power line QRM on 14 m.c.

VK9DM uses P.P. 10's. Contact him o.m.'s—he QSL's.

4KS is a new ham who has made a modest start with a single 45.

4RH is helping to keep Bundaberg on the map. Rig comprises three stages using 42's throughout.

4JP, George Gray, has just returned from U.S.A. George has promised us an article for Amateur Radio.

Here's a reminder to country members. The librarian advises that only on the return of old magazines will new ones be forwarded. Don't hoard the "mags" O.M.'s, do your best to keep 'em in circulation.

## South Australian Division

(By VK5KL.)

Last month unfortunately Mr. Reiman, hon. secretary, had to resign from the secretarial duties owing to change in his work not allowing sufficient time to devote to the job. Mr. Castle has voluntarily taken over the above position. Also with much regret the council received the resignation of Mr. Luxton as a council member due to his work taking him away from the city. Regret was felt by all, as Mr. Luxton has been a hard worker for years past as a council member and also as QSL officer, a position to which a lot of praise is seldom given.

Members of this division are most anxious that an Emergency Corps be formed to cover all Australia in lieu

## Amateur Radio

of the R.A.A.F.W.R. being abandoned. This has been mentioned to Federal Headquarters and, we hope, receive due consideration.

In October on Eight Hours Day, a field day has been decided to be held at Murray Bridge. The locality was decided upon after a great discussion, that it was only fair to give the Murray and South Eastern district members a chance to attend, after having held two in the north. Arrangements are in the hands of a committee of three, Messrs. Kilgariff, McAllister and Walker.

The last general meeting took the form of a visit to the Railways Institute, where members were entertained by the above Institute's Radio Club and shown around all the working appliances of the whole institute, including the transmitting room and model railways.

(By VK5GW.)

The first week of this month will see the commencement of the new student classes under Mr. Mullet.

It has been suggested by some of the members of this division that full consideration should be given by all divisions to having State control of each division abolished, and have only one controlling body, namely Federal Headquarters. The State councils would still remain, to manage their own particular division. What do you say, fellows?

### BARKER ZONE.

There is not much doing in this zone. The Murray Bridge and Mt. Gambier gangs appear to be the most consistent.

The Naracoorte gang will be more prominent from now on, as 5GW is on the air again and 5XR now has A.C. and has tried out the oscillator with 150 volts on the plate. The main power packs are not quite ready and a new receiver is to be built.

5GW had his first QSO's after being off the air for almost two years, when he worked 3DZ, 3TT and 5BG. The rig from 5GW is very rough, due to using EC on power that is not up to the standard AC. Will soon be using crystal.

5BN will be on phone shortly. Talking of speech amplifier and modulator. Has been rather quiet lately. QYL and rebuilding blamed. Now using C.C. 43 osc., pair of 43 as

buffer and four 48s in parallel as final amplifier.

5TW.—Tom has been on holidays. His antenna has either blown down or been taken down. Expects to be on phone shortly.

5CJ.—Has been rebuilding. Rig is now C.C. 6A6 oscillator-doubler, 89 buffer link, coupled to 807. Now working off 460 volts D.C. mains with 6 volt battery supplying filaments. Crystal frequency 3591 k.c.

5BG.—Very consistent with FB phone.

5BF.—Frank can sure get out. Heard with very FB phone on 40 mx every Sunday. Works on 20 mx during the rest of the week.

5YL.—Betty also on phone now, in line with the rest of the Murray Bridge gang.

Conditions here in Naracoorte very patchy on 20 mx, W, KA and K6 being the most consistent.

### WAKEFIELD ZONE.

B.E.R.S. 195.—Eric has now received his new U.H.F. receiver and will be looking out for sigs, so get busy chaps and shoot your 5 mx stuff at him. If you wish to make skeds write to Eric Trebilcock, c/o Telegraph Station, Powell Creek, via Tennant Creek, Northern Territory.

5LR.—Rumour has it that Jack was in the city recently. His fone still as good as ever, and that means as good as any in the amateur bands.

5HS.—Still very quiet. What are you doing Wally? Don't keep us in the dark, O.M.

5RE.—Will be as active as ever as soon as his busted arm mends.

Now an appeal to all amateurs in this zone to make for Murray Bridge for the festivities on Eight Hours Day, Wednesday, 12th October. I'm hoping to be there myself. It is a long time since we had a field day at a location easily accessible to the River and South Eastern gang, so make the most of it and show the Council that the idea is a good one.

### GREY ZONE.

(By VK5WG.)

Very little news this time chaps. I must appeal to you to keep me in touch with your activities. I was pleased to hear a few of the members of this zone active in the recent message handling contest. I hope that you have all sent in entries for the

## Amateur Radio

country members station equipment contest. Now for scandal.

5AT.—Bert has been transferred to the city and as soon as he has settled down I think we shall hear his call on the air again.

5LC.—Les was one of the most active men in the message handling contest, despite his very low power.

5FB.—Back again in Sydney. Looks as though this division is going to lose Frank. Well, we certainly wish him the best of luck.

5KJ.—George was in the city recently and met a few of the city men. Believe he intended to buy a gun to deal with a clergyman B.C.L. Drastic measures, but perfectly justified.

5NW.—Puts over a very FB session on 160 mx, between 8 and 9 a.m. Sundays.

5TL.—Has daily sked with 5JT. Tom also competed in the message handling contest.

5HR.—Bill has decided that he will not be off the air much longer. The bug is biting good and hard.

### Tasmanian Division

(By 7YL.)

The monthly meeting, which included a special meeting for all VK7 members, was very well attended. Several important matters were thrashed out and resulted in some extra keen and warm arguments. However, finally these were settled to the satisfaction of most.

The social committee under the capable direction of L. Hyland (7LH) has secured the use of a movie projector for one evening, and has arranged to show the film, "Process of Valve Manufacture," kindly loaned by Noyes Bros. some evening soon. This should be both entertaining and educational.

Our QSL manager, "Buck," threatens to write an article "The Trials and Tribulations of a QSL manager." He would welcome suggestions on how to procure the other fellow's long awaited dx card.

A proposed trip north had to be postponed owing to the extreme inclemency of old man weather. Snow fell in the streets of some of the suburbs around Hobart and members preferred warm firesides to the bleakness of the Main Highway.

Condx here have been like the weather—not so hot. 80 mx is ex-

tremely patchy, during the bright spots, ZL's and VK3's pound through R max. 40 mx has been deadly during the evenings this month. The same can be said of 20 mx, except during the early evenings, between 5 and 6 p.m., when W fone stns come through quite solidly.

Personal and otherwise. Jottings about the VK7 gang will be few this month as all are most inactive.

7CM.—Only member who can be heard regularly down here.

7DH.—Bought a new meter for his rig recently. Very busy these days, servicing BCL sets which have a of going wrong during tests.

7LH.—Energetic man! Drove forty miles on a frosty night to attend W.I.A. meeting, and then didn't obtain a seat near the fire.

7JB.—Has the motor car craze—wonder if it will mix financially or otherwise with radio. Dark "goings-on" in shack, said to be in preparation for October contest.

7KV.—Last heard helping out a local "B" class station during submarine cable breakdown in Bass strait. Keith's new super certainly pulled through the description of the Second Test from GSB very well.

7YL.—Sadly watched the poor old 210 pass out t'other night. Maybe it was weary of doing nothing lately. However, a super process of rejuvenation restored it completely (for time being, anyway.)

News from North and North West would be greatly appreciated.

7RY.—On 40 mx quite consistently, but heard only occasionally here owing to "skip." Had pleasure of QSO last Sunday. Edgar uses a home made dynamic mike which certainly sounds 1b. Sends his 73's to Sthn gang, whom he hasn't seen or heard for ages.

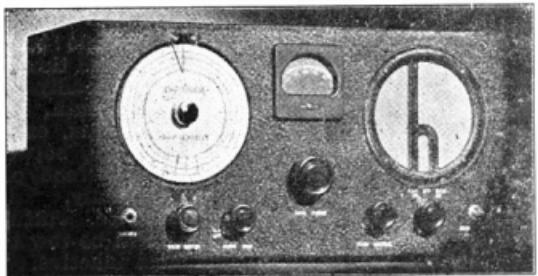
7NC.—Had a very interesting QSO with "Popeye" of the "S.S. Spinach"—a real he-man pirate on board ship somewhere in vicinity of Gibraltar. Seemed to know quite a few Hobart "hams"—wonder who he was?? (hi).

73's,  
JOY.

### COUNTRY SECTION.

(By VK3UK.)

We are hoping to see quite a number of country members down in the city during the Division's big week, July 27th to August 6th. The annual



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general meeting followed by a special key section meeting and culminating in the Exhibition, provide an incentive that should bring many to Melbourne. In addition to the amateur equipment at the Exhibition, of special interest will be the A.W.A. Senior Communications Receiver and an A.W.A. C.R.O., which have been loaned for the occasion.

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73.

RUPERT C. PETERSON VK3PT  
HARRY CLIFF VK3HC

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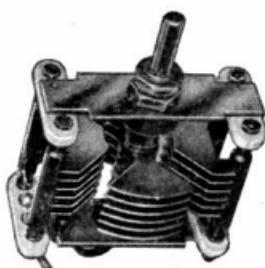
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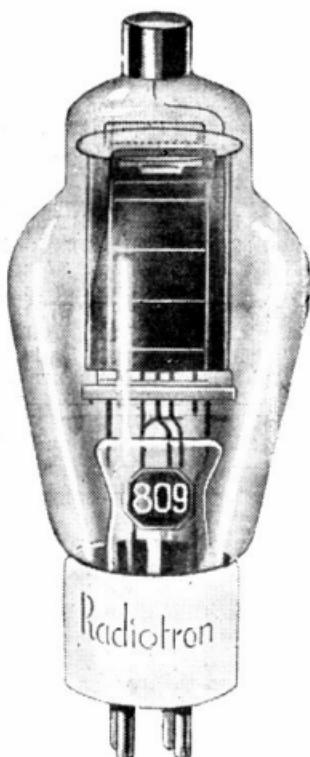
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